

### REMARKS

Applicant requests reconsideration of the application in view of the foregoing amendments and the discussion that follows. The status of the claims as of this response is as follows: Claims 1-36 are pending and claims 16-36 were withdrawn from consideration. Applicant reserves the right to file divisional applications to the separately patentable subject matter of claims 16-36. Claims 1, 7, 9, 10 and 19 have been amended herein.

#### The Amendment

Claim 1 was amended to recite that each of the linear arrays comprises an enclosed channel having internal capillary dimensions and having attached on an internal surface of the channel an array of features for conducting chemical reactions. Support therefor is in the specification, for example, page 16, lines 24-25 and 31-32, and page 18, lines 30-32. Claim 1 was also amended to recite that a surface of the rotatable support comprises retaining elements for retaining each linear array on the rotatable support. Support therefor is in the specification, for example, original claim 7.

Claim 7 was amended to provide proper reference back to claim 1, from which claim 7 depends.

Claim 9 was amended to provide proper reference back to claim 1, from which claim 9 ultimately depends.

Claim 10 was amended in a manner similar to that for claim 1.

Claim 19 was amended to change its dependency from claim 16 to claim 10. The recitation of claim 16 was an obvious typographical error.

#### Information Disclosure Statement

Applicant acknowledges the indication in the Office Action that Applicant's IDS submitted on October 15, 2003 (original IDS), lists patents with incorrect patent numbers. The patents referred to in the Office Action were U.S. patent application publications. Applicant subsequently provided a supplemental IDS on July 11, 2006, wherein these U.S. patent application publications were listed with the year identifier in front of the number. For example, the prior IDS listed 0,045,274 dated Apr. 18, 2002, whereas the supplemental IDS listed 2002/0045274. Therefore, each U.S. patent application publication cited in the original IDS was repeated in the

supplemental IDS, which was considered by the U.S.P.T.O. as indicated in the present Office Action.

#### Restriction Requirement-Product and Process Claims

The previous Office Action noted that restriction was required between product and process claims. Method claims 16-36 have been maintained herein to fulfill the requirement of M.P.E.P. §821.04 regarding rejoinder with respect to withdrawn process claims.

#### Rejections under 35 U.S.C. §102

Claims 1, 2, 4, 7, 8, 10 and 11 were rejected under 35 U.S.C. 102(b) as being anticipated by Wang, *et al.* (U.S. Patent No. 5,922,617) (Wang).

Without acquiescing in the assertions in the Office Action, Applicant submits that Wang is deficient in not disclosing each and every element of claim 1. For example, Wang fails to disclose an apparatus comprising one or more linear arrays where each of the linear arrays comprises an enclosed channel having internal capillary dimensions and having attached on an internal surface of the channel an array of features for conducting chemical reactions. The device of Wang has open cavities on the surface of a support with beads within the cavities. Furthermore, Wang is deficient in not teaching or suggesting a surface of the rotatable support that comprises retaining elements for retaining each linear array on the rotatable support. The retaining elements of Wang, as alleged in the Office Action, are pits that each receives a particle.

Claims 2, 4, 7 and 8 depend ultimately from claim 1 and are, therefore, patentable over Wang by virtue of such dependency since claim 1 is patentable over Wang as demonstrated above.

Claim 10 is patentable over Wang for reasons similar to those discussed above with regard to the rejection of claim 1 over Wang. For example, Wang fails to disclose an apparatus comprising one or more linear arrays where each of the linear arrays comprises an enclosed channel having internal capillary dimensions and having attached on an internal surface of the channel an array of features for conducting chemical reactions. Furthermore, Wang is deficient in not teaching or suggesting a surface of the rotatable support that comprises retaining elements for retaining each linear array on the rotatable support.

Claim 11 depends ultimately from claim 10 and is, therefore, patentable over Wang by virtue of such dependency since claim 10 is patentable over Wang as demonstrated above.

Claims 1-4, 6, 9-12 and 14 were rejected under 35 U.S.C. 102(e) as being anticipated by Remacle, *et al.* (U.S. Patent Application Publication No. 2002/0177144) (Remacle).

Without acquiescing in the assertions in the Office Action, Applicant submits that Remacle is deficient in not disclosing each and every element of claim 1. For example, Remacle fails to disclose an apparatus comprising one or more linear arrays where each of the linear arrays comprises an enclosed channel having internal capillary dimensions and having attached on an internal surface of the channel an array of features for conducting chemical reactions. As recognized in the Office Action, the device of Remacle has DNA bytes spotted into lines on the surface of a support. Furthermore, Remacle is deficient in not teaching or suggesting a surface of the rotatable support that comprises retaining elements for retaining each linear array on the rotatable support.

Claims 2-4 and 6 depend ultimately from claim 1 and are, therefore, patentable over Remacle by virtue of such dependency since claim 1 is patentable over Remacle as demonstrated above.

Remacle does not disclose or suggest the apparatus of Claim 9 because Remacle does not disclose or suggest a processor that controls rotation of the support such that at one speed fluid is removed from the enclosed channel and at another speed the support is advanced and held for examination by the examining device.

The Office Action contends that paragraph 144 of Remacle mentions centrifugal force and paragraph 24 of Remacle states that all manipulation and reading functions are coordinated and computer controlled. In paragraph 144, Remacle indicates that centrifugal force of the turning disc opens valves 36. There is no disclosure of using centrifugal force to remove the contents of the Remacle apparatus. The disclosure regarding the use of centrifugal force relates only to the opening of the valve. This is clearly evident from Remacle's disclosure of an alternate means for opening valve 36, which follows directly the discussion concerning the opening of valve 36 using centrifugal force. In the alternate embodiment for opening valve 36, a closing material is melted to open the valve.

It would be apparent to one skilled in the art that the disclosure regarding centrifugal force to open the valve does not extend to using centrifugal force to remove the contents of Remacle's apparatus because there is no similar disclosure with regard to the alternate approach of opening the valve by melting a closing material. The disclosure in the reference relates only to opening valve 36 and there is no further disclosure regarding removing the contents of the Remacle apparatus for either of the disclosed embodiments for opening the valve. Remacle does not mention centrifugal force to remove contents of his apparatus in either of the above embodiments. Accordingly, the conclusion that Remacle teaches the use of centrifugal force to remove the contents of the apparatus is, therefore, based, not on the teaching of the reference, but on the disclosure in Applicant's specification, which is not permitted. Furthermore, as explained above, the apparatus of Remacle does not include an enclosed capillary channel.

The Office Action contends that the courts have stated that an apparatus is defined by its components and not the process of using the apparatus. However, notes the Office Action, Remacle teaches the components and function as recited. Applicant submits that the processor, which controls rotation of the support such that at one speed fluid is removed from the enclosed channel and at another speed the support is advanced and held for examination by the examining device, is an element of the apparatus. As discussed above, Remacle does not disclose or suggest such a processor.

With regard to the contention that the processor defines only a process of using the apparatus, the processor is programmed to carry out the function as claimed. There is no disclosure of a processor in Remacle that carries out the claimed function and the Office Action. The only way that one skilled in the art would be inclined to provide a program for the computer of Remacle to perform the function of controlling rotation of the support such that at one speed fluid is removed from the enclosed channel and at another speed the support is advanced and held for examination by the examining device is to use Applicant's own disclosure. The skilled artisan would not be able to find such a disclosure in Remacle because Remacle makes no such disclosure. Furthermore, the Office Action refers to paragraph 0024 of the reference, which recognizes that a computer or processor that performs particular functions is part of the apparatus.

The Office Action was able to "interpret" the language of the reference so as to contend that the reference discloses the limitation of the present claims of a processor that controls rotation of the support such that at one speed fluid is removed from the linear array and at another speed the support is advanced and held for examination by the examining device. Applicant does not agree with this interpretation and has demonstrated above that Remacle's processor does not perform the function as claimed. To avoid this deficiency in the teaching of the reference, the Office Action contends that the claims are drawn to an apparatus and that the claim language is directed only to a manner in which the apparatus is to be employed. However, the claimed apparatus comprises a processor that performs the function as claimed. Remacle does not disclose or suggest the processor of the present apparatus either explicitly or inherently.

Claim 10 is patentable over Remacle for reasons similar to those discussed above with regard to the rejection of claim 1 over Remacle. For example, Remacle fails to disclose an apparatus comprising one or more linear arrays where each of the linear arrays comprises an enclosed channel having internal capillary dimensions and having attached on an internal surface of the channel an array of features for conducting chemical reactions. Furthermore, Remacle is deficient in not teaching or suggesting a surface of the rotatable support that comprises retaining elements for retaining each linear array on the rotatable support.

Claims 11, 12 and 14 depend ultimately from claim 10 and are, therefore, patentable over Remacle by virtue of such dependency since claim 10 is patentable over Remacle as demonstrated above.

#### Rejections under 35 U.S.C. §102/103

Claim 15 was rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Wang.

Without in any way acquiescing in the arguments presented in the Office Action, claim 15 depends ultimately from claim 10 and is, therefore, patentable over Wang by virtue of such dependency since claim 10 is patentable over Wang as demonstrated above.

Claims 3, 6, 9, 12 and 14 were rejected under 35 U.S.C. 103(a) as being unpatentable over Wang in view of Remacle.

Without in any way acquiescing in the arguments presented in the Office Action, claim 3 depends ultimately from claim 1 and claim 12 depends ultimately from claim 10. Claims 3 and 12 are, therefore, patentable over a combination of the teachings of Wang and Remacle by virtue of such dependency since claims 1 and 10 are patentable over Wang and Remacle as demonstrated above.

Without in any way acquiescing in the arguments presented in the Office Action, claim 6 depends ultimately from claim 1 and claim 14 depends ultimately from claim 10. Claims 6 and 14 are, therefore, patentable over a combination of the teachings of Wang and Remacle by virtue of such dependency since claims 1 and 10 are patentable over Wang and Remacle as demonstrated above.

Regarding claim 9, the Office Action recognizes that Wang is silent regarding control of rotation speed. However, asserts the Office Action, Remacle teaches a similar apparatus wherein rotation is controlled by a processor (referring to paragraph 124) to use centrifugal force to move fluids and to rotate the disc for focused photo-detection (referring to paragraphs 194 and 98). It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made, asserts the Office Action, to modify the processor of Wang to provide required speed for the centripetal force for fluid movement and rotation for focused detection. One of ordinary skill in the art would have been motivated to do so, argues the Office Action, for the expected benefit of providing the controlling rotation speed for the desired application as taught by Remacle.

Applicant respectfully traverses the rejection of claim 9 over a combination of the teachings of Wang and Remacle. As demonstrated above, Remacle does not disclose or suggest a processor that controls rotation of the support such that at one speed fluid is removed from the enclosed channel and at another speed the support is advanced and held for examination by the examining device. The Office Action contends that paragraph 144 of Remacle mentions centrifugal force and paragraph 24 of Remacle states that all manipulation and reading functions are coordinated and computer controlled.

In paragraph 144, Remacle indicates that centrifugal force of the turning disc opens valves 36. There is no disclosure of using centrifugal force to remove the contents of the apparatus of the reference. This is clearly evident from Remacle's disclosure of an alternate means for opening valve 36, which follows directly the discussion concerning the opening of valve 36 using centrifugal force. As discussed

above, in the alternate embodiment for opening valve 36, a closing material is melted to open the valve. It would be apparent to one skilled in the art that the disclosure regarding centrifugal force relates only to opening the valve and does not extend to using centrifugal force to remove the contents of Remacle's apparatus because the alternate approach discussed for opening the valve, i.e., the melting of a closing material, relates only to opening valve 36. Neither of the approaches taught in Remacle for opening the valve includes a discussion of removing the contents of the Remacle apparatus. In addition, Remacle does not mention centrifugal force in the approach involving the melting of a closing material. Therefore, since Remacle does not teach this limitation of claim 9, the combination of teachings of Wang and Remacle does not yield the apparatus of claim 9.

Claims 5 and 13 were rejected under 35 U.S.C. 103(a) as being unpatentable over Wang in view of Tsuji (U.S. Patent No. 5,776,782) (Tsuji).

Without in any way acquiescing in the arguments presented in the Office Action, claim 5 depends ultimately from claim 1 and claim 13 depends ultimately from claim 10. Claims 5 and 13 are, therefore, patentable over a combination of the teachings of Wang and Tsuji by virtue of such dependency since claims 1 and 10 are patentable over Wang as demonstrated above and Tsuji does not cure the deficiencies of Wang enumerated above with respect to claims 1 and 10.

#### Conclusion

Claims 1-15 satisfy the requirements of 35 U.S.C. §§102 and 103 and 102/103. Allowance of the above-identified patent application, it is submitted, is in order.

Respectfully submitted,



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